

ABSTRACT

The present invention relates to IR-sensitive compositions suitable for the manufacture of printing plates developable on-press. The IR-sensitive compositions comprise:

- (a) a first polymeric binder which does not comprise acidic groups having a pKa value less than or equal to 8;
- (b) a second polymeric binder comprising polyether groups
- (c) an initiator system comprising
 - (i) at least one compound capable of absorbing IR radiation selected from triarylamine dyes, thiazolium dyes, indolium dyes, oxazolium dyes, cyanine dyes, polyaniline dyes, polypyrrole dyes, polythiophene dyes and phthalocyanine pigments;
 - (ii) at least one compound capable of producing radicals selected from polyhaloalkyl-substituted compounds; and
 - (iii) at least one polycarboxylic acid represented by the following formula I



wherein Y is selected from the group consisting of O, S and NR^7 ,
each of R^4 , R^5 and R^6 is independently selected from the group consisting of hydrogen, C_1 - C_4 alkyl, substituted or unsubstituted aryl, $-COOH$ and NR^8CH_2COOH ,
 R^7 is selected from the group consisting of hydrogen, C_1 - C_6 alkyl,

-CH₂CH₂OH, and C₁-C₅ alkyl substituted with -COOH,

R⁸ is selected from the group consisting of -CH₂COOH, -CH₂OH and
-(CH₂)₂N(CH₂COOH)₂ and r is 0, 1, 2 or 3, with the proviso that at least
one of R⁴, R⁵, R⁶, R⁷ and R⁸ comprises a -COOH group or salts thereof;
and

(d) a free radical polymerizable system comprising at least one member
selected from unsaturated free radical polymerizable monomers, oligomers which are free
radical polymerizable and polymers containing C=C bonds in the back bone and/or in the
side chain groups,

wherein the following inequality is met:

$$\text{ox}_i < \text{red}_{ii} + 1.6 \text{ eV}$$

with ox_i = oxidation potential of component (i) in eV

red_{ii} = reduction potential of component (ii) in eV.